

In the Claims:

Please amend the claims and add new claims as follows.

--1. (Currently Amended) A method of determining a location of an impact of a projectile upon a target space comprising:

(a) receiving projectile impacts upon an impact device surface, wherein said impact device includes a plurality of layers, and wherein ~~at least one of the~~ said plurality of layers includes an electrically conducting sensor layer with ~~at least one~~ an electrical property including one of resistance and capacitance that changes in response to the impact from the projectile and a resilient material layer coupled to said sensor layer and deforming in response to said projectile impact to facilitate said electrical property changes of said sensor layer; and

(b) monitoring said electrical property of the sensor layer of the impact device and determining ~~a location~~ coordinates of the projectile impact upon the impact device surface based on changes of said sensor layer electrical property.

2. (Original) The method of claim 1, wherein step (a) further includes:

(a.1) applying an electrical signal of known magnitude across the sensor layer.

3. (Original) The method of claim 1, wherein step (b) further includes:

(b.1) measuring the electrical property at a plurality of measurement locations upon the sensor layer to establish a reference measurement for each of said plurality of measurement locations.

4. (Original) The method of claim 3, wherein step (b) further includes:

(b.2) sampling the electrical property at said plurality of measurement locations to obtain a sample measurement at each of said plurality of measurement locations and comparing each of the sample measurements to a corresponding reference measurement to determine a deviation from the corresponding reference measurement.

5. (Original) The method of claim 4, wherein step (b) further includes:

(b.3) determining the impact location of the projectile upon the impact device based upon the determined electrical property deviations.

6. (Original) The method of claim 1, wherein the impact device is physically aligned with a target space corresponding to at least one of a physical target and a generated virtual target, and step (b) further includes:

(b.1) correlating the impact device with the target space by associating at least one location upon the impact device with at least one corresponding location within the target space.

7. (Original) The method of claim 1, wherein the impact device is transparent and the impact device is aligned in front of the target space.

8. (Original) The method of claim 1, wherein the impact device is opaque and the impact device is aligned behind the target space.

9. (Original) The method of claim 1, further including:

(c) displaying at least one of a score value, an elapsed time between projectile impacts and an impact location on a target image.

10. (Original) The method of claim 1, wherein step (b) further includes:

(b.1) calibrating the determined impact location to account for environmental conditions.

11. (Original) The method of claim 5, wherein step (b.3) further includes:

(b.3.1) processing the deviations in accordance with electronically stored instructions.

12. (Original) The method of claim 4, wherein step (b.2) further includes:

(b.2.1) comparing the determined deviation to a pre-defined threshold value; and

(b.2.2) determining the presence of a projectile impact in response to the determined deviation exceeding the pre-defined threshold value.

13. (Currently amended) The method of claim 1, wherein said ~~at least one~~ electrical property ~~includes~~ is the resistance of the sensor layer.

14. (Currently amended) The method of claim 1, wherein said ~~at least one~~ electrical property ~~includes~~ is the capacitance of the sensor layer.

15. (Original) The method of claim 1, wherein step (a) further includes:

(a.1) calibrating the impact device by impacting the impact device surface at a location physically adjacent to a predefined location within the target space.

16. (Currently Amended) A target assembly for determining a location of an impact of a projectile upon a target space, the target assembly comprising:

an impact device to receive a projectile impact upon a surface thereof, wherein the impact device includes a plurality of layers, and wherein ~~at least one of the said~~ plurality of layers includes an electrically conducting sensor layer with ~~at least one~~ an electrical property including one of resistance and capacitance that changes in response to the impact from the projectile and a resilient material layer coupled to said sensor layer and deforming in response to said projectile impact to facilitate said electrical property change of said sensor layer; and

a monitoring module to monitor said electrical property of the sensor layer of the impact device and determine ~~a location~~ coordinates of the projectile impact upon the impact device surface based on changes of said sensor layer electrical property.

17. (Original) The target assembly of claim 16, wherein the monitoring module further includes:

a sensor power module to apply an electrical signal of known magnitude across the sensor layer.

18. (Original) The target assembly of claim 16, wherein the monitoring module further includes:

a reference module to measure the electrical property at a plurality of measurement locations upon the sensor layer to establish a reference measurement for each of said plurality of measurement locations.

19. (Original) The target assembly of claim 18, wherein the monitoring module further includes:

a sampling module to sample the electrical property at said plurality of measurement locations to obtain a sample measurement at each of said plurality of measurement locations and to compare each of the sample measurements to a corresponding reference measurement to determine a deviation from the corresponding reference measurement.

20. (Original) The target assembly of claim 19, wherein the monitoring module further includes:

an assessment module to determine the location of the projectile impact upon the impact device surface based upon the determined electrical property deviations.

21. (Original) The target assembly of claim 16, wherein said monitoring module includes:

a controller module to receive the impact location information from the monitoring module and determine a location of impact upon a target space that is aligned with said impact device.

22. (Original) The target assembly of claim 21, wherein the impact device is physically aligned with a target space defined by at least one of a physical target and a generated virtual target, and wherein the controller module further includes:

a correlation module to correlate the impact device with the target space by associating at least one location upon the impact device with at least one corresponding location within the target space.

23. (Original) The target assembly of claim 16, wherein the impact device is transparent.

24. (Original) The target assembly of claim 16, wherein the target assembly further includes:

a display interface to communicate with at least one of an external display and a computer system to display at least one of a score value, an elapsed time between projectile impacts and an impact location on a target image.

25. (Original) The target assembly of claim 21, wherein the controller module further includes:

a calibration module to calibrate the determined impact location to account for environmental conditions.

26. (Original) The target assembly of claim 16, wherein the target assembly further includes:

a memory module that stores electronic processing instructions.

27. (Original) The target assembly of claim 19, wherein the monitoring module further includes:

a threshold module to compare a determined deviation to a pre-defined threshold value to determine the presence of a projectile impact in response to the deviation exceeding a pre-defined threshold value.

28. (Currently amended) The target assembly of claim 16, wherein said ~~at least one~~ electrical property ~~includes~~ is the resistance of the sensor layer.

29. (Currently amended) The target assembly of claim 16, wherein said ~~at least one~~ electrical property ~~includes~~ is the capacitance of the sensor layer.

30. (New) The method of claim 1, wherein the impact device is aligned with a target space defined by at least one of a physical target and a generated virtual target.

31. (New) The target assembly of claim 16, wherein the impact device is aligned with a target space defined by at least one of a physical target and a generated virtual target.--